

REMARKS

The present application was filed on January 15, 2002 with claims 1 through 6. Claims 1-6 are presently pending in the above-identified patent application. Claims 1, 4, and 6 are proposed to be amended herein.

In the Office Action, the Examiner objected to claims 1, 4, and 6 due to indicated informalities, rejected claims 1-6 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, and rejected claims 3 and 6 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Examiner rejected claims 1 and 2 under 35 U.S.C. §102(e) as being anticipated by Suzuki et al. (United States Patent Number 6,763,059), and rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over Bar-David et al. (United States Patent Number 5,623,511) and further in view of Suzuki et al.

The specification has been amended to correct typographical errors.

Formal Objections

Claims 1, 4, and 6 were objected due to indicated informalities. In particular, the Examiner asserts that the word “generating” in claim 1 should be replaced with “generated,” that the word “filtering” in claim 4 should be replaced with “filtered,” and that the expression “the method according to one of the claim 4” in claim 6 is indefinite and should refer to only one of the claims 4 and 5.

Claims 1, 4, and 6 were amended to address the Examiner’s concerns and Applicants respectfully request that the objections to the cited claims be withdrawn.

Section 112 Rejections

Claims 1-6 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, and claims 3 and 6 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. In particular, the Examiner asserts that the preambles of claims 1-6 are directed to methods wherein the bodies of the claims are directed to the structure, and asserts that the disclosure does not describe as to how the correlation value is corrected with half the energy of the reference symbol.

Claims 1 and 4 have been amended such that the bodies of the claims are directed to method steps. Applicants also note that the present disclosure teaches that “each of the correlation values may be corrected with half the energy of the corresponding reference symbol in order to *make the correlation values mutually comparable*.” (Page 5, lines 1-3, of the originally filed specification.) A person of
 5 ordinary skill in the art would recognize, in light of the present specification, the techniques to correct the correlation values to *make the correlation values mutually comparable*.

Applicants, therefore, respectfully request that the section 112 rejections
 10 be withdrawn.

Independent Claims 1 and 4

Independent claim 1 was rejected under 35 U.S.C. §102(e) as being anticipated by Suzuki et al., and claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Bar-David et al and further in view of Suzuki et al. Regarding claim 1,
 15 the Examiner asserts that Suzuki teaches wherein a set of pilot symbols (i.e. reference symbols) are generated by channel estimating means 231 to 23K.

Regarding claim 1, Applicants note that Suzuki teaches that “channel estimating means 231 to 23K extract *pilot symbols* from demodulation symbols, and *compare the extracted pilot symbols with a pilot symbol pattern* to be originally
 20 transmitted *so as to estimate states of channels*.” (Col. 5, lines 55-58; emphasis added.) Suzuki discloses a pilot symbol pattern; Suzuki does not disclose or suggest a predetermined *set of symbols*. Independent claim 1, as amended, requires *generating a set of reference symbols on the basis of the predetermined set of symbols* and a channel impulse response between the transmitter and the receiver; and *comparing each of the*
 25 *successive parts of the received signal, each part having the length of a symbol, with each of the reference symbols*, yielding a detected symbol for each part of the received signal. The present invention teaches that “the *detected symbol* is the symbol from the predetermined set of symbols which correspond with the selected reference symbol for the part of the received signal.” (Page 5, lines 5-6, of the originally filed specification.)
 30 Suzuki, therefore, also does not disclose or suggest *generating a set of reference symbols on the basis of the predetermined set of symbols* and a channel impulse response and does

not disclose or suggest *comparing each of the successive parts of the received signal, each part having the length of a symbol, with each of the reference symbols, yielding a detected symbol* for each part of the received signal.

Regarding claim 4, the Examiner acknowledges that Bar-David is silent
5 about each part of the filter signal being compared to each of the symbols from the predetermined set of symbols yielding a detected symbol for each part of the filter signal, but asserts that Suzuki discloses that the received symbols are compared with predetermined symbols through correlating means 211-21K and 241-24K (FIG. 6; col. 5, lines 51-58).

10 As noted above, Suzuki does not disclose or suggest a predetermined *set of symbols*. Independent claim 4, as amended, requires filtering the received signal with a filter which yields a filter signal, wherein the filter is a matched filter to the channel impulse response between the transmitter and the receiver; and *comparing each of the successive parts of the filter signal, each part having the length of a symbol, with each of*
15 *the symbols from the predetermined set of symbols yielding a detected symbol* for each part of the filter signal.

Thus, Suzuki et al. and Bar-David et al., alone or in any combination, do not disclose or suggest generating a set of reference symbols on the basis of the predetermined set of symbols and a channel impulse response between the transmitter
20 and the receiver; and comparing each of the successive parts of the received signal, each part having the length of a symbol, with each of the reference symbols, yielding a detected symbol for each part of the received signal, as required by independent claim 1, as amended, and does not disclose or suggest filtering the received signal with a filter which yields a filter signal, wherein the filter is a matched filter to the channel impulse
25 response between the transmitter and the receiver; and comparing each of the successive parts of the filter signal, each part having the length of a symbol, with each of the symbols from the predetermined set of symbols yielding a detected symbol for each part of the filter signal, as required by independent claim 4, as amended.

Dependent Claims 2-3 and 5-6

30 Dependent claim 2 was rejected under 35 U.S.C. §102(e) as being anticipated by Suzuki et al.

Claims 2-3 and 5-6 are dependent on claims 1 and 4, respectively, and are therefore patentably distinguished over Suzuki et al. and Bar-David et al. (alone or in any combination) because of their dependency from amended independent claims 1 and 4 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

All of the pending claims, i.e., claims 1-6, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,



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